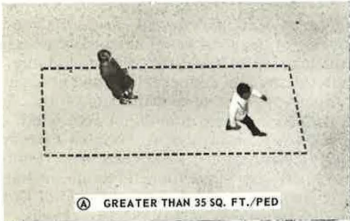
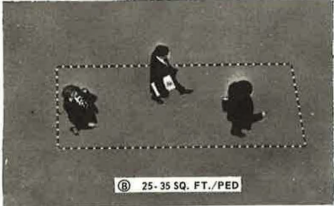
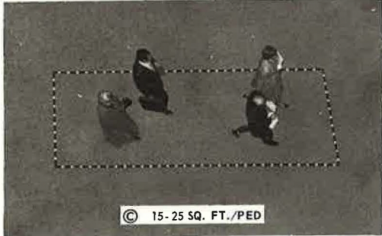





### **How much time should there be between classes?**

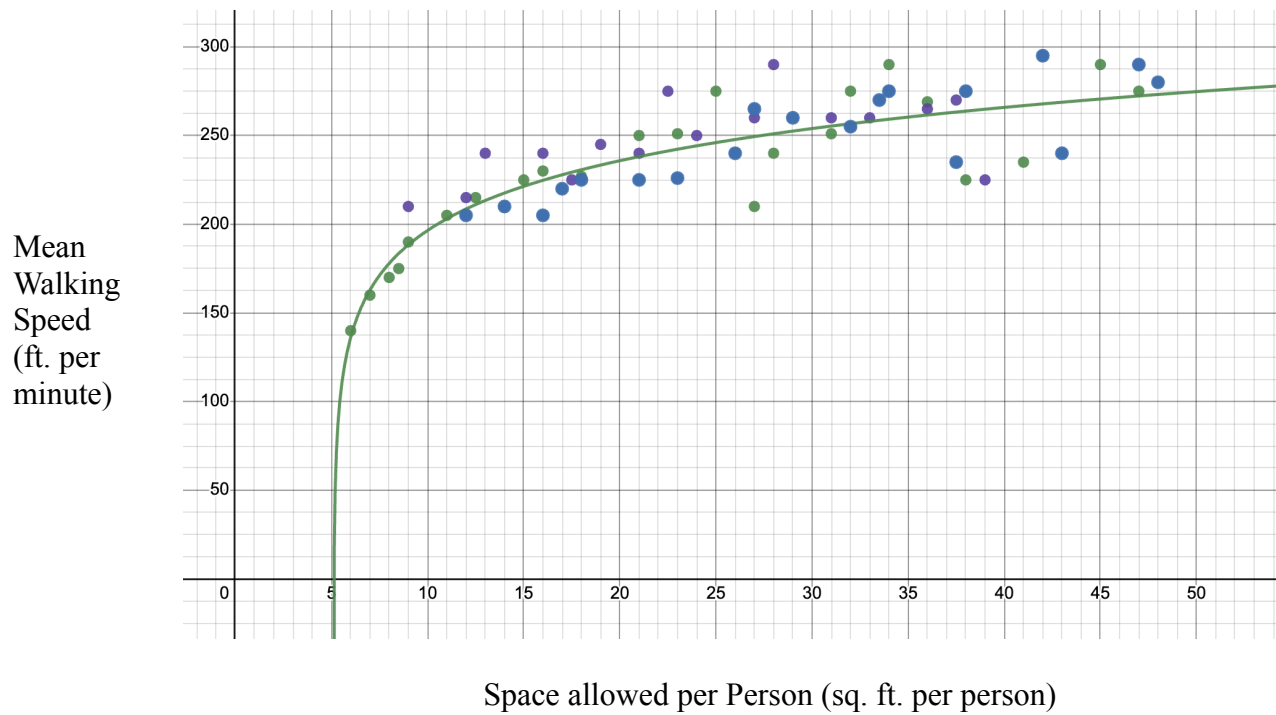
It is important to provide an appropriate amount of time between classes. The school wants to make sure that each student can quickly and safely arrive at their next class. However, next year, the school's population will increase from 630 to 830. Can the school's current time between classes remain the same with this increase in population? Based on the information in the handouts, determine how much time should be allowed between classes once the high schools combine. Be able to justify your estimate of time.

## RESOURCE A

### Visualizing the Volume of People “square feet allowed per person”

<div style="text-align: center;">  </div> <p>A.</p> <ul style="list-style-type: none"> <li>-Every person has more than 35 sq. ft. to themselves.</li> <li>-People can move freely at their own pace and avoid obstacles.</li> <li>- About 7 people per minute per 1 ft. width of walkway</li> </ul>	<div style="text-align: center;">  </div> <p>B.</p> <ul style="list-style-type: none"> <li>-Every person has 25 to 35 sq. ft. to themselves.</li> <li>-People can mostly move freely at their own pace. May encounter obstacles in bidirectional traffic.</li> </ul>
<div style="text-align: center;">  </div> <p>C.</p> <ul style="list-style-type: none"> <li>-Every person has 15 to 25 sq. ft. to themselves.</li> <li>-People’s walking speeds and ability to avoid obstacles is restricted.</li> <li>-About 10 to 15 people per minute per 1 ft. width of walkway</li> <li>-Reasonably fluid flow, but there could be friction or interaction between people</li> </ul>	<div style="text-align: center;">  </div> <p>D.</p> <ul style="list-style-type: none"> <li>-Every person has 10 to 15 sq. ft. to themselves</li> <li>-Majority of people would have their walking speeds restricted and would encounter obstacles.</li> <li>-Might have momentary stoppages of flow, and people might have to weave in the crowd to make forward progress.</li> </ul>
<div style="text-align: center;">  </div> <p>E.</p> <ul style="list-style-type: none"> <li>- Every person has 5 to 10 sq. ft. to themselves.</li> <li>- Everyone would have their walking speeds restricted to a shuffle, and people would not be able to weave through the crowd to make progress.</li> </ul>	<div style="text-align: center;">  </div> <p>F.</p> <ul style="list-style-type: none"> <li>- Every person would have less than 5 sq. ft. to themselves.</li> <li>- Walking speeds restricted to a shuffle. Movement is sporadic and based on those at the front. Complete flow breakdown.</li> <li>- Not recommended.</li> </ul>

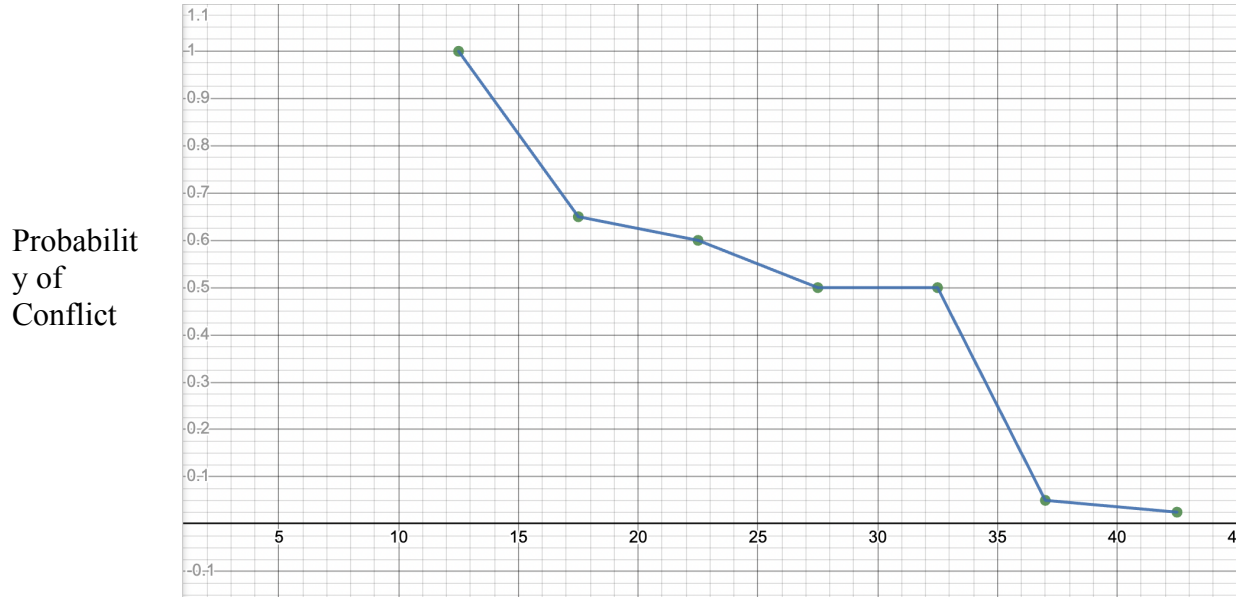
**RESOURCE B**  
**Mean Walking Speed v.s. Space per Person**



Best fit function –  $f(x) = 81.2642 \log(2.97451x - 15.2104) + 102.024$

- Hallway width 6 ft
- Hallway width 7.5 ft
- Hallway width 10 ft

**RESOURCE C**  
**Probability of Obstacles v.s. Space per Person**

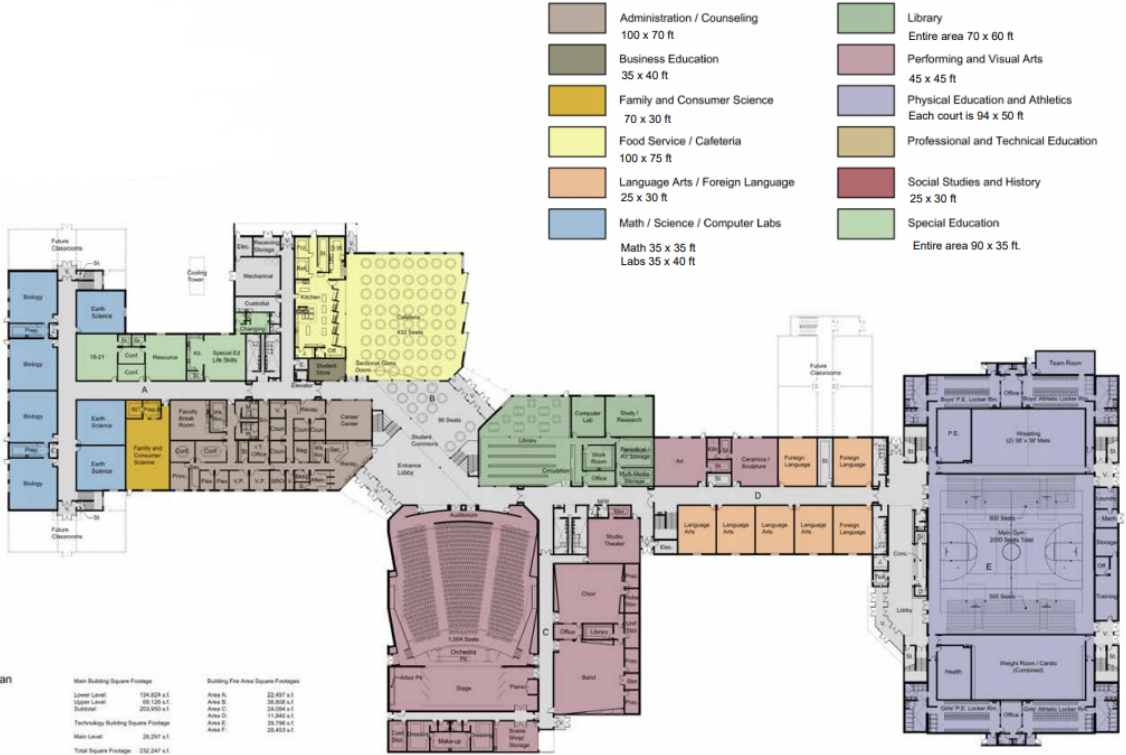


Space allowed per Person (sq. ft. per person)  
(Fruin, 1970)













# RESOURCE D

## Map of Mountain High School

### Lower Level Floor Plan



# Upper Level Floor Plan

- |   |  |   |  |
|---|--|---|--|
|  | Administration / Counseling<br>100 x 70 ft                           |  | Library<br>Entire area 70 x 60 ft                            |
|  | Business Education<br>35 x 40 ft                                     |  | Performing and Visual Arts<br>45 x 45 ft                     |
|  | Family and Consumer Science<br>70 x 30 ft                            |  | Physical Education and Athletics<br>Each court is 94 x 50 ft |
|  | Food Service / Cafeteria<br>100 x 75 ft                              |  | Professional and Technical Education                         |
|  | Language Arts / Foreign Language<br>25 x 30 ft                       |  | Social Studies and History<br>25 x 30 ft                     |
|  | Math / Science / Computer Labs<br>Math 35 x 35 ft<br>Labs 35 x 40 ft |  | Special Education<br>Entire area 90 x 35 ft.                 |



Upper Level Floor Plan  
Scale: 1" = 30'-0"

## References Related to Culturally Relevant Pedagogy

- Berry, R. Q., Conway, B. M., Lawler, B. R., & Staley, J. W. (2020). The USDA problem. Retrieved from the companion website for *High School Mathematics Lessons to Explore, Understand, and Respond to Social Injustice*. [www.corwin.com](http://www.corwin.com).
- Gutiérrez, R. (2007) Context matters: Equity, success, and the future of mathematics education. In Lamberg, T. & Wiest, L. R. (Eds.). *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 1-18)*. Stateline (Lake Tahoe). University of Nevada, Reno.
- Gutiérrez, R. (2018). Why we need to rehumanize mathematics. In Goffney, I. and Gutiérrez, R. (eds.), *Annual Perspectives in Mathematics Education: Rehumanizing mathematics for students who are Black, Indigenous, and Latinx (pp. 1-10)*. National Council of Teachers of Mathematics.
- Gutstein, E. (2006). Driving while Black or Brown: The mathematics of racial profiling. In D. Mewborn (Series Ed.), J. Masingila (Vol. Ed.), *Teachers engaged in research: Inquiry in mathematics classrooms, grades 6-8. Vol.3*, (pp. 99 – 118). Information Age Publishing.
- Ladson-Billings, G. (1995). Making mathematics meaningful in multicultural contexts. In W. Secada, E. Fennema, & L. B. Adjian (Eds.), *New directions for equity in mathematics education*, (pp. 126 -145). Cambridge University Press.
- Style, E. (1996). Curriculum as window and mirror. *Social Science Record, Fall*. First published in *Listening for All Voices*, Oak Knoll School monograph, 1988.
- Will, M. (2022, May 11). What should culturally relevant teaching look like today? Gloria Ladson-Billings explains. *Education Week*, 41(33), 17.